Vermont Department of Education

CTE Program Competencies

Engineering 3 / 4

CIP: 14.0000

Occupational Skills

The student demonstrates the specified level of competency in occupational skills:

0	1	2	3	4
No Exposure	Introduced	Practiced	Entry Level	Competency

Students will study and master core (*) content standards and then select one of either Architectural Drawing or Mechanical Drawing.

0 1 2 3 4

A. WORK PLACE BEHAVIORS

*A.001 Maintain an acceptable attendance record.
*A.002 Work well independently, showing pride and interest in work assignments.
*A.003 Demonstrate aptitude for creativity.
*A.004 Plan and perform work accurately, neatly and efficiently.
*A.005 Show personal growth as a worker, evaluating own work.
*A.006 Follow directions from supervisors and are willing to ask questions for clarification.
*A.007 Develop good oral and written communication skills.
*A.008 Cooperate with co-workers and supervisors.
*A.009 Demonstrate teamwork as a contributing team member.
*A.010 Develop personal career goals.
*A.011 Demonstrates positive attitude toward work.

B. SAFETY

*B.001 Understands and applies safety requirements of the work place.
*B.002 Recognizes any unsafe working conditions and reports them to the supervisor, understanding ethical and safety issues involved.
*B.003 Follows proper hazardous material handling and disposal procedures, according to state and federal regulations.

C. ARCHITECTURAL DRAWING

C.001 Identify various architectural styles.
C.002 Properly locate house on and draw site plans.
C.003 Properly layout and draw residential floor plans.
C.004 Properly draw elevation views.
C.005 Dimension architectural drawings as necessary.
C.006 Construct 3 dimensional model of house.

D. MECHANICAL DRAWING

D.001 Draws various threads and fasteners.
D.002 Draws cams
D.003 Draws springs.
D.004 Draws gears.
D.005 Draws detail drawings.
D.006 Draws assemble drawings.
D.007 Depicts shop processes in working drawings (casting, welds, etc.).
D.008 Calculates tolerance limits and applies them to drawings.
D.009 Demonstrates advanced dimensioning techniques (holes, tolerancing, etc.).

PRINCIPLES OF TECHNOLOGY AND MATHEMATICS

‘ ‘ ‘ ‘ ‘ *A. **Force, work, rate and resistance in mechanical systems**

‘ ‘ ‘ ‘ ‘ *B. **Pressure, work, rate, and resistance in fluid systems**

‘ ‘ ‘ ‘ ‘ *C. **Voltage, work, rate, and resistance in electrical systems**

‘ ‘ ‘ ‘ ‘ *D. **Temperature, rate, and resistance in thermal systems**

‘ ‘ ‘ ‘ ‘ *E. **Technical mathematics**